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Motivational factors influencing small construction and auto repair enterprises to participate in occupational health and safety programmes

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ABSTRACT

Small enterprises have limited resources to prioritise occupational health and safety (OHS) so regulators and other stakeholders have developed programmes to support them. The present study analysed the factors influencing active participation of small construction and auto repair enterprises to engage in a Danish national OHS programme focusing on the prevention of wear and tear of the musculoskeletal system. The programme provided the enterprises with financial support and support from a facilitator. The study was a qualitative case study supplemented with selected survey data from the enterprises and qualitative data from stakeholders involved in the implementation of the programme. The results showed that the way the programme was introduced through labour inspectors, employer associations, or networks influenced the motivation of the enterprises to engage in the programme. The motivation for active participation also depended on the content of the prevention package, the economic support and the possibility for facilitation. The decision to start the implementation process depended on whether the owner-managers acknowledged the need for the new OHS approach and whether they found the process meaningful. Contextual factors, as experienced by the owner-managers, influenced the motivation for active participation. These included inter alia general attitude towards authorities and procedures, access to relevant projects and technical equipment, the characteristics of the manager, and the workplace culture. It is concluded that contextual factors can limit the efficacy of programme mechanisms and should be taken into account when designing programmes.

1. Introduction

On a global scale small enterprises make up the major part of all enterprises and account for most jobs in many industries (OECD, 2009). These enterprises have a higher risk of accidents and occupational diseases which are aggravated by limited access to human, economic, and technological resources (Champoux and Brun, 2003; Sørensen et al., 2007; Walters, 2001). Moreover, it is now recognised that methods developed specifically for large enterprises cannot be transferred to smaller enterprises (Hasle and Limborg, 2006), and it is expensive to reach these enterprises due to their large numbers and the few employees in each enterprise. The development of programmes supporting small enterprises to improve OHS is therefore an important and difficult task.

Regulators, practitioners, and researchers have looked at many possibilities for designing programmes which can support small enterprises (Breslin et al., 2010; Hasle and Limborg, 2006; MacEachen et al., 2010; Walters, 2001). The results hereof have varied but it is clear that it is necessary to consider the characteristics of small enterprises in the design of the programmes. The owner is often also the manager handling all management issues (from now on referred to as 'owner-manager'), and the owner-managers' personal values and priorities have strong influences on the workplace culture and social relations (Eakin, 1992; Eakin et al., 1998; Hasle et al., 2012a). Thus, the motivation of the owner-managers for active participation in OHS activities is crucial (Eakin, 1992; Hasle and Limborg, 2006). Yet, the mechanisms which can motivate owner-managers not only to participate in OHS programmes but also to complete and change behaviour to improve OHS have so far received limited attention in research. Such knowledge is important for the design of programmes which will be appreciated and considered useful by the small enterprises.

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This paper explored this issue by studying a Danish OHS programme aimed at small enterprises in the construction and auto repair industries (Hasle et al., 2012b). We investigated through our case studies the mechanisms that influenced the motivation of owner-managers of small enterprises to active participation and implementation of the programme, and how their interpretation of contextual conditions influenced the motivation process.

The main contribution of the paper is to show how the motivation to engage in the OHS programme depends on a sensemaking process which is influenced by (1) the introduction of the programme, (2) the content of the programme, and (3) the owner-managers' interpretation of the context under which they run their enterprise.

The point of departure is the existing knowledge on intervention programmes for small enterprises, and research on motivational theory and realist analysis. We used this knowledge to build a model for the process from the introduction of the programme to the start of the implementation process. The model is used for the analysis of data from interviews with owner-managers in the enterprises enrolled in the programme. The results of the analysis are subsequently discussed, and implications for development of future programmes as well as for research are outlined.

2. Intervention programmes for small enterprises

The aims of intervention programmes such as OHS interventions are basically to change the attitude and the behaviour of a target group set in a specific context. The outcome of such programmes is often ambiguous and cannot be clearly predicted. The intervention therefore has a complex nature (Rossi et al., 2004) where the best available evidence is used to increase the likelihood of success, but different entities in the target group will have different outcomes (Pawson and Tilley, 1997). In OHS programmes, knowledge about the specific needs of small enterprises, such as the workplace structure and culture, have been used in the design of the programmes, but many have had limited success and have been difficult to sustain (Champoux and Brun, 2003; Hasle and Limborg, 2006; Legg et al., 2010; Walters and Lamm, 2003). One explanation is that the knowledge about small enterprises has in the past been limited, and programmes tended to be down-scaled versions of similar ones aimed at large enterprises. However, during the last decade, knowledge about small enterprises has progressed and is now used for programme development.

Among the most significant problems to take into consideration is the limited resources to control OHS (Hasle et al., 2012b; Walters, 2001), the difficulties in meeting the demands from authorities, and to comply with legislation (Baldock et al., 2006; Vickers et al., 2005). Important explanations for these problems are that small enterprises, compared to larger enterprises, have a lack of financial and managerial resources, and that they give their main priority to fight for economic survival, and thereby less priority to OHS where they seem to have general preference for informal and non-formalised approaches to preventive OHS activities (Arocena and Núñez, 2010; Champoux and Brun, 2003; Mayhew, 1997; Mayhew and Quinlan, 1997; Rigby and Lawlor, 2001; Walters, 2004).

The management and the organisational structure of small enterprises differ from larger enterprises (Hasle et al., 2012b; MacEachen et al., 2010). One feature is that small enterprises often develop an informal organisation of work, and they often have a lack of systematic management procedures. Another is that they often fight for survival due to a high degree of external uncertainty, and in doing so they develop the ability to respond quickly to changing economic conditions (MacEachen et al., 2010). In the perception of OHS, many owner-managers often tend to underestimate risks and overestimate their own knowledge of the necessary control measures (Hasle et al., 2012b). The owner-managers are often guided more by personal and cultural beliefs than by national guidelines (Hasle and Limborg, 2006; MacEachen et al., 2010). OHS is considered as a problem that has to be solved when it occurs, and many owner-managers do not recognise the need for a systematic OHS approach, and they are as a result often at a low preventive level (Antonsson et al., 2002). It is therefore important to focus on simple and low-cost solutions, on action-oriented methods combining OSH with other management goals, as well as on trust and dialogue (Hasle and Limborg, 2006; Lamm, 2000). A model for the development of OHS programmes for small enterprises was recently suggested (Hasle et al., 2012b). The key element is the development of a programme theory for intervention based on an analysis of an intervention objective and a possible means to reach an objective adjusted to the particular context of small enterprises.

2.1. The Danish OHS programme

In 2011, in order to meet the OHS needs of small enterprises in selected high risk industries, the Danish government (through the so called Prevention Fund) launched a new programme called the Prevention Packages (Hasle et al., 2012b).

The prevention packages was targeted at the construction and auto repair industry and focused on the prevention of exposure to physically demanding work tasks such as heavy lifting and carrying as well as awkward working postures. The goal was a reduction of physical strain in the musculoskeletal system in order to reduce the prevalence of musculoskeletal discomfort and disease, absence, and early retirement (Hasle et al., 2012b). As the title indicates, the enterprises should, by implementing the prevention packages, improve OHS and not only fulfil the requirements of the law.

The prevention packages included financial support for the implementation of a step-by-step manual for reduction of physical strain. Two prevention packages were developed for each industry (Table 1).

In both industries, the enterprises received a financial grant covering reimbursement of salaries to the employees and additional costs incurred during the implementation processes. Due to the context of the construction industry with temporary workplaces it was deemed necessary to provide direct personal support by a facilitator from the Danish Working Environment Authority trained in facilitation of implementation processes. Small enterprises (less than 9 employees in the construction industry and less than 25 employees in the auto repair industry) could apply and the implementation process was defined to last three to six months in both industries.

The main dissemination of information about the availability of the prevention packages was carried out by the Danish Working Environment Authority via a new concept of dialogue-oriented inspection during which the enterprises were encouraged to apply for a prevention package. The Prevention Fund as well as the employer associations and unions also provided information about the prevention packages.

3. Theoretical approach

Much of the current research on motivation focuses on what motivates individuals at work, whereas the role of motivation for participation in OHS programmes has been less explored (Bjorklund, 2001; Hedlund et al., 2010). An OHS programme is based on an external influence where someone, whether a

Table 1
Description of the content of the prevention packages in the two industries.

Industry	Name	Content
Construction	Heavy lifting	The enterprise tests relevant lifting aids and evaluate the use of them for future building projects
	Improved planning	The enterprise applies a systematic approach for planning building projects and work task (short- and long-term)
Auto repair	Reorganisation of workshop	The enterprise closes for two days and reorganise the workplace (change lay-out, equipment, and tools)
	Change of work routines	The enterprise changes work routines for heavy lifting and awkward positions, and develop and evaluate relevant solutions

government authority or an OHS researcher, wants enterprises to do something which they would not have done otherwise. In order to be successful in this endeavour, it is necessary to understand how the enterprises can be motivated to act. The motivation has been studied in regulation research (Nielsen and Parker, 2012), identifying economic, social, and normative motives; and in institutional research, pointing at coercive, normative, and mimetic motives (DiMaggio and Powel, 1991). However, in case of small enterprises dominated by owner-managers, the organisational or institutional levels are not as important as the personal motivation of the owner-manager. Even though we realise that the owner-manager is entangled in a web of social relations and therefore do not behave independently, the decision of the owner-manager is still crucial. In our study, the question is why the owner-manager has decided to apply for a prevention package and get involved in the practical implementation. We therefore chose to look into motivational theory developed in psychology research, which has taken a particular strong interest in motivation related to education and learning and is built on self-determination theory (Ryan and Deci, 2000a; Ryan and Deci, 2000b, which is the basis for the following introduction to the key concepts).

3.1. Extrinsic and intrinsic motivation

In the understanding of motivation, the focus in this paper is on the change of action in the specific target group: *"Orientation of motivation concerns the underlying attitudes and goals that give rise to action – that is, it concerns the why of actions."* (Ryan and Deci, 2000a).

A key element in motivational literature is the distinction between intrinsic and extrinsic motivation (Deci and Ryan, 1985). Intrinsic motivation is when the individual does something because it is inherently interesting and enjoyable (Ryan and Deci, 2000b). On the contrary, when an individual is influenced from the outside it is called extrinsic motivation. Extrinsic motivation can vary in its relative autonomy and can either reflect external control or self-regulation. Extrinsic motivation can be divided into four main groups (Ryan and Deci, 2000b):

(1) *external regulation* where behaviour is performed to satisfy an external demand or obtain an externally imposed reward contingency,
(2) *introjected regulation* where individuals perform actions with the feeling of pressure in order to avoid guilt or to attain pride,
(3) *identification* where individuals identify the personal importance of a behaviour and accept its regulation as their own.
(4) *integrated regulation* where individuals identify regulation as assimilated to the self and own values and needs.

The four groups can be considered a continuum moving from strong external regulation to strong internal regulation which is close to intrinsic motivation. It does not imply that changes between the various forms of extrinsic motivation need to move in sequence. In our study we have chosen to divide the four groups into two: external regulation (1 and 2) and internal regulation (3 and 4) as Ryan and Deci also suggest.

The last kind of regulation is amotivation, which is the state where individuals' behaviour lacks intentionality. Amotivation results from not valuing an activity, not feeling competent to do it, or not believing it will yield a desired outcome.

Individuals' motivation may jump from one end of the continuum to the other (Ryan and Connell, 1989) and even integrate different motivational elements at the same time (Adler and Chen, 2011). The literature furthermore indicates that the stronger the internal regulation, the stronger the motivation to act (Ryan and Connell, 1989; Ryan and Deci, 2000a). However, we recognise that external power can force individuals to take certain actions. In our study of the motivation to participate in OHS programmes it therefore becomes important to learn to what extent the programme induces externally or internally regulated motivation, and subsequently to find ways to influence the motivation towards strong internal regulation. From a learning perspective, regulators should pursue an environment that will result in internalisation and internal regulation. This means that the individual takes in a regulation and transforms the regulation into the individual's own value. Increasing internal regulation will result in greater persistence, more positive self-perceptions, and better quality of engagement (Ryan and Deci, 2000a).

According to the self-determination theory (Deci and Ryan, 1985), three parameters are important for internal regulation: competence (to be able to complete the action), relatedness (the action fulfils the need for connectedness), and autonomy (the action is controlled by oneself). The more a programme supports these parameters, the stronger is the tendency to develop internal regulation.

In our study, these three parameters are interpreted as attached to the individual but should also be considered as contextual. As an example, *competence* is seen as the individual's ability to complete an action which is dependent on a particular circumstance (the context).

The process of internalising a regulation involves an interpretation and creation of meaning: "*To fully internalize a regulation, and thus to become autonomous with respect to it, people must inwardly grasp its meaning and worth. It is these meanings that become internalized and integrated in environments that provide supports for the needs for competence, relatedness, and autonomy*" (Ryan and Deci, 2000a).

The notion of meaning is what Weick expresses as the process of sensemaking that has to take place before an (intention to) action happens (Weick, 2000; Weick et al., 2005).

In terms of motivation for becoming involved in OHS programmes, the intention to act therefore depends on the owner-manager's sensemaking of the programme.

3.2. Realist analysis

The notion of motivation as the intention to act is analysed by using Realistic Evaluation as the analytical approach (Pawson and Tilley, 1997; Pawson, 2006). A realist design is based on a theory

of the causal explanation of how mechanisms in contexts result in outcomes. According to this approach *"programmes work (have successful 'outcomes') only in so far as they introduce the appropriate ideas and opportunities ('mechanisms') to groups in the appropriate social and cultural conditions ('contexts')"* (Pawson and Tilley, 1997: p. 57).

By cultural conditions is meant that programmes are embedded in contexts referring to not only a spatial, geographical, or institutional location, but also in social rules, norms, values, or interrelationships gathered in specific places (Poland et al., 2008). The context sets limits on the efficacy of programme mechanisms which should be understood as the stakeholders' choices (sense-making) and their capacity (resources) to put these into practice. Realistic evaluation then includes investigation of the extent to which the pre-existing social contexts 'enable' or 'disable' the intended mechanism of change. Whether the change happen depends on whether individuals desiring change have the ability to bring it about (Pawson and Tilley, 1997). The context is in our paper defined as the owner-managers' interpretation of the conditions they operate under which will influence the motivation to participate in the programme.

Interventions are always based on assumptions about how change processes and causal relations are connected to the programme activities. According to the realist analysis, these assumptions should be outlined in a theory of change or a programme theory (Pawson, 2006).

The underlying assumptions of the change process of the prevention packages are illustrated in Fig. 1. The introduction to the programme makes the enterprises aware of the programme and the mechanisms trigger them to apply. Then a process of sensemaking takes place which will lead to an intention to act. Interaction with the context determines the efficacy of programme mechanisms and the enterprises' ability to put the programme into action.

4. Material and methods

The study was a qualitative case study which was particularly appropriate because this empirical inquiry makes it possible to capture the mechanisms of active participation "within its real-life context" (Yin, 2003, p. 18). It covered case studies in selected small enterprises participating in the programme supplemented with selected survey data from the enterprises participating in the programme. Additionally qualitative data from stakeholders involved in the implementation of the programme was included.

The following data sources were included in the study:

- Case studies: interviews (telephone interviews and face-to-face interviews) with owner-managers in selected enterprises which received a prevention package.
- Supplementary interviews with representatives from the Danish Working Environment Authority, the Prevention Fund, employer associations, and unions participating in the development of packages and/or dissemination of information about the Prevention Packages.
- Documents about the prevention packages.
- Questionnaires to owner-managers in enterprises which received a prevention package.

4.1. Case interviews with owner-managers

We used stratified purposeful sampling (Sandelowski, 2000) in order to get information about causes for motivation from different contextual settings.

Out of all the enterprises participating in the programme, 20 enterprises were selected as qualitative cases (10 in each industry). The enterprises were selected based on the following criteria: (1) introduction by different information sources to the prevention packages, (2) different regions of the country, (3) different sub-industries (for construction), and (4) different prevention packages.

The cases were found through a telephone survey that proceeded until we had 20 relevant cases which met the distribution criteria and volunteered to participate. These telephone interviews were also a part of the qualitative data material and were used to assess the enterprises' motivation to apply for a prevention package.

Where possible, the enterprises were visited when they had begun the implementation process, and we attended meetings between the owner-manager, employees, and the facilitators. At each visit we interviewed the owner-managers. Those enterprises that had not yet started the implementation process were followed-up by a number of further telephone interviews (2 to 5) during a period of six month. If they did not take action during this period, visits were not carried out.

The interviews with the owner-managers were based on an interview guide to ensure that all relevant themes were raised (Kvale, 1996). This guide encompassed questions about management, organisational structure, OHS, contextual changes, introduction to prevention packages, expectations, motivation (as defined in the Self-determination theory), relation to the facilitator (for construction), engagement, as well as the implementation process.

The interviews lasted on average 1 h and were audio-taped and transcribed. The characteristics of the case enterprises are listed in Table 4 (Appendix A).

4.2. Supplementary interviews

In addition, 24 interviews were carried out with key representatives from the relevant employer associations (6), unions (4), the construction health and safety bipartite council (2), the Prevention Fund (2), and inspectors and facilitators from the Danish Working Environment Authority (10). The focus of these interviews was their involvement in the dissemination of information about the programme and support to the enterprises during the application and implementation, and the specific context of the industries. The interviews lasted on average ½–1 h and were audio-taped and a summary was written and selected quotes were afterwards transcribed.

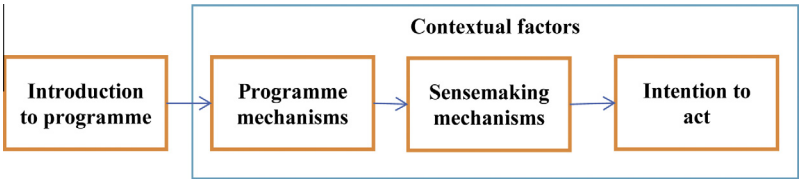

Fig. 1. A theoretical framework of how motivation leads to action.

4.3. Documents about the prevention packages

Finally, written material about the prevention packages including material from the preparation of the packages and the step-by-step manuals for the implementation process was collected and included in the analysis.

4.4. Questionnaires to owner-managers

The analysis of the case studies was supplemented with survey data from a questionnaire to all the owner-managers participating in the programme. In this paper we only include data on how the enterprises were introduced to the prevention packages as the case studies showed that the way the programme was introduced had an impact on the motivation to participate in the programme, and a purposeful sampling of cases would give a biased picture of the introduction of the programme.

In the construction industry, 165 enterprises applied for a prevention package and 127 replied to the questionnaire (a response rate of 77%). In the auto repair industry, 221 enterprises applied for a prevention package and 168 replied to the questionnaire (a response rate of 76%).

4.5. Analytical approach

The main part of the analysis presented in this paper is based on the qualitative data. This data was analysed using a thematic analysis as described by (Braun and Clarke, 2006). Accordingly, we analysed each transcribed interview by means of the following process: first, an overall impression was obtained by initially reading through the text and generating initial codes across the entire material. The codes were then collated into potential themes, the themes were reviewed in relation to the coded extracts, and subsequently a thematic map of the analysis was generated. Each theme was defined and named based on our theoretical point of departure in Self-Determination theory, Weick's notion of sensemaking, and our basic understanding, grounded in the Pawson and Tilley's Realistic Evaluation. Thus, we analysed the reasons for applying and the reasons for beginning the implementation process. Owner-managers mainly referring to motivators such as pressure from the labour inspectors or the economic support/reward were assessed to be mainly externally regulated whereas reference to the benefits for the business in terms of economy, efficiency, or social relations as well as the accordance with owner-manager's personal values were assessed to be mainly internally regulated. Explanations for the two types of regulation are traced in the context of the industries and the owner-manager's sensemaking of the prevention package. All interview texts were coded, using the software programme NVivo (QSR NVivo 9).

In the analysis, the qualitative data was supplemented with an item from a survey about the enterprises' introduction to the prevention packages. The survey data was used to confirm and supplement the insights we have found in the case studies regarding the distribution of information about the programme. The survey data also showed us the differences and similarities between the two industries.

5. Results

5.1. The enterprises' motivation to apply for a prevention package

Data from the questionnaires showed that the way the programme was introduced was very different in the two industries. The main difference was the role of the employer association in the auto repair industry and the role of the inspections in the construction industry (Table 2).

The supplementary interviews revealed that in both industries the employer associations encouraged the small enterprises to apply for prevention packages either by newsletters, via regional meetings with members, or through workplace visits. Other enterprises became aware of the programme through networks or found out themselves by other means.

Table 3 shows the variation in motivation to apply for the prevention packages between case enterprises categorised as having either amotivation, external or internal regulation, and a combination of the latter two.

In a few cases, the owner-manager did not expect much when he chose to apply, and the explanations for applying were; *"why*

Table 2
The ways of introduction to the Danish OHS-programme (survey data).

	% of the responses (construction), $N = 126$ (%)	% of the responses (auto repair), $N = 167$ (%)
Network	10	33
Employees	2	3
Inspector from the Danish Working Environment Authority	73	32
Employer association	23	53
Health and safety bipartite council	<1	<1
Union	<1	<1
Websites or newsletter	11	9
Conference or similar	<1	3
Leaflet	<1	5
Other	13	9

Table 3
Primary motivation to apply for a prevention package (telephone interviews).

Primary motivation	Example of motivation	Auto repair[a]	Construction[a]
Amotivation	No particular reason	4a	6c
External regulation	Economic support	7a	
	Pressure from the inspector		1c, 7c
Internal regulation	Care/responsibility for employees	1a, 9a	2c, 3c
	Content of the prevention package	2a, 5a, 6a	4c, 5c, 8c, 10c
Both internal and external regulation	Both economic support and content or care for employees	3a, 8a, 10a	9c

[a] Case identification number.

not?" and *"what is there to lose?"*. In that sense we categorised their motivations as *amotivation* as they had *low expectations.*

Three case enterprises were primarily motivated by *external regulation.* Two construction owner-managers felt a pressure from the inspectors to apply and applied to avoid an enforcement notice or further inspection.

> *"[...] I would not get an enforcement notice if I applied for a prevention package, so of course I applied. I would call that voluntary enforcement." (Case 7c)*

In the third enterprise motivated by *external regulation,* the owner-manager applied due to the economic support provided.

Most case enterprises (11) were primarily motivated by *internal regulation* and four applied because they wanted to take care of their employees.

> *"I do not want my employees to work themselves to death because of heavy lifting, so I am open to reasonable changes." (Case 9a)*

Seven owner-managers applied because they recognised the relevance of the content of the prevention package in relation to their needs. They explained that they had planned to do something similar, were about to start a new building project, or had already talked about a problematic work posture that they needed to avoid, and they saw the opportunity to use the prevention package to solve these already recognised problems.

> *"We [the owner-manager and the employees] had talked about renovating the workshop anyway, so it was perfect with the opportunity to get economic support so that we would not lose revenue." (Case 5a)*

For four enterprises it was not possible to assess whether the primary motivation was internal or external regulation as it was often a mix of the content, the responsibility for employees, and the opportunity to get economic support.

> *"It is a mix of both the content and that we received financial support [...]. We make an effort and it costs some money, so it was also an aspect that we could get some support. It is ok to pay something yourself e.g. a trolley." (Case 3a)*

5.2. Contextual factors influencing the case enterprises' motivation to apply

The way the prevention packages were introduced and how it made the enterprises apply was different in the two industries. In the auto repair industry, most of the enterprises applying for 'Reorganisation of the workshop' had heard about it through one particular active employer association e.g. through a newsletter or when they were signing up for a membership. Most of the enterprises applying for 'Change of work routines' had heard about it through inspection and explained that, based on the inspectors' recommendations, they chose to apply.

In the construction industry, most enterprises were introduced through the inspection no matter which prevention package they applied for. 'Heavy lifting' was the most popular as it appealed to many owner-managers and their building projects, whereas 'Improved planning' included a systematic approach that seemed to be more difficult to apply in daily practice. This could be due to the fact that the construction industry was the first to be offered prevention packages. According to the inspectors in the construction industry, some of them explained that they to some extent were uncertain of their role and the content of the prevention packages, especially the prevention package 'Improved planning'. Some of the inspectors found it difficult to promote this prevention package because they felt they lacked knowledge about the planning process in construction projects. Additionally, a new concept of dialogue oriented inspections were for some inspectors challenging and their approach depended to a large extend on former experience and personality.

The general attitude towards regulations and standards varied a lot between the two industries. Half of the case enterprises in auto repair were members of an auto franchise (independently-owned service centres) where there are standardised procedures including audits and skills updating for both employees and owner-managers. Additionally, all auto repair workshops are monitored by other public authorities such as the Environmental Protection Agency. Representatives from the employer associations explained that the relationship between the auto repair industry and the Danish Working Environment Authority was good and that the enterprises were used to external inspections. In auto repair none of the interviewed owner-managers reported pressure from the authority to apply and they considered the inspection as a positive encounter.

> *"I had a positive experience meeting the inspectors. They offered good guidance and direction rather than finger-wagging. It was very good with concrete suggestions for improvements. I had beforehand some prejudices about the inspectors." (Case 8a)*

In the construction industry representatives from the unions and employer associations expressed that only electricians and plumbers are generally accustomed to various external inspection processes because their work has to comply with legal standards. Carpenters and bricklayers have less standard procedures and wider latitudes to carry out the work. These differences could also explain the different approach towards authorities.

The relationship between construction enterprises and the Danish Working Environment Authority varies a lot among the different enterprises and especially for the small enterprises.

> *"[...] the big enterprises view the inspectors as a collaborator. The small enterprises may feel that the inspectors try to steal their time and money. Some small enterprises have understood that they have to establish a good relationship with the authorities [...] others hate them." (Representative from the construction health and safety bipartite council)*

This relationship could explain the reasons why two owner-managers felt a pressure from the inspector to apply.

5.3. The enterprises' motivation to act

We explored the reasons why eight enterprises did not start the implementation process whereas the other 12 started shortly after the application. The relation between the motivation when applying and the extent to which they started the process was studied. The enterprises that had begun the process were categorised as 'intention to act' and those who had not started yet were categorised as 'no intention to act'. Fig. 2 illustrates the pattern from motivation to intention to act.

The figure shows that the initial internal regulation had the largest effect on the intention to act but it could also change into no intention to act. Other kinds of regulation, including amotivation, could also develop into an intention to act.

5.4. Weak intention to act

Three construction owner-managers did not begin the implementation process as they found the prevention packages irrelevant because they faced challenges beyond their control in terms of workload, the appropriate building project, or strong competition.

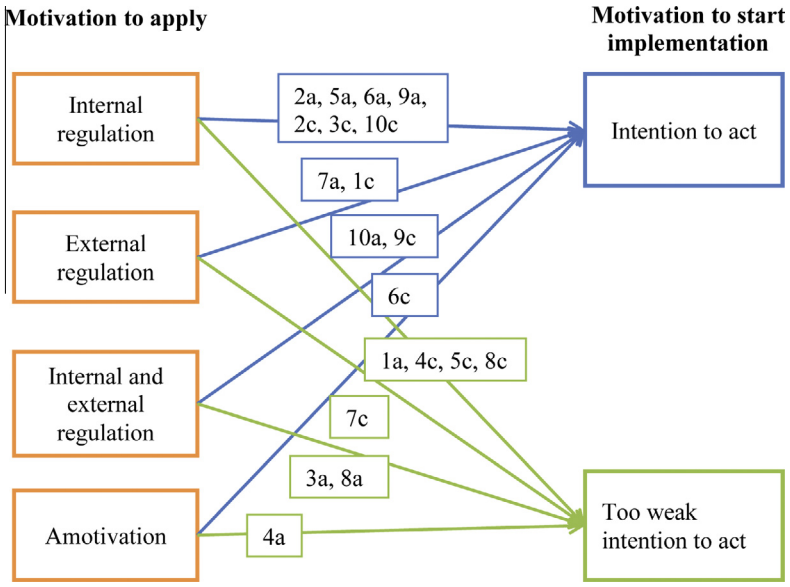

Fig. 2. The change of motivation from application to implementation.

"[we have] not reached our benchmark [in the implementation process]. We wanted to rent some technical equipment [as part of the process] – an electric sack trolley [...] We are busy at the moment and it will continue for some time." (Case 5c)

"[...] I want them [the facilitators] to join us at a project of a certain size. [...] There is no project right now." (Case 4c)

"[...] The problem is we do not get any projects. We worked at a construction site next to another carpenter where we supplied scaffolding. And the carpenter next to us crawled around without scaffolding. [...] I think it is wrong that we compete with each other on the price [...]" (Case 8c)

Even though the three owner-managers were originally internally motivated, the experienced contextual factors limited the efficacy of the programme mechanisms i.e. the economic support, and the facilitation and the content became less important. As the owner-managers did not feel that they had the resources and the competences to integrate the prevention packages into their own values, no action was taken and the process came to a standstill.

Further explanation for the change of motivation from internal regulation to 'no intention to act' for these three owner-managers was a lack of relatedness to the facilitators. On the one hand, the owner-managers expected the facilitators to provide solutions, but on the other hand the owner-managers did not make appointments with the facilitators in order to receive that support. As a result, the facilitators in two of the enterprises chose to end the collaboration as no appointments could be established.

One owner-manager (7c), who applied for the prevention package under pressure from the inspector, did not acknowledge the need for a new planning approach. From his perspective their existing approach was sufficient.

"[...] we have a system that we think works. I see the idea [...] I find it forward-looking. But to spend time developing it is difficult. If it was any other spring or winter where we were not so busy, I would have more time to sit down and do it [...]" (Case 7c)

This owner-manager thereby lacked the competence and autonomy to control time and resources necessary to implement the prevention package.

In the auto repair industry, two case enterprises (1a and 3a) went from either internal or both internal and external regulation to no intention to act. The owner-managers did not give clear reasons for this change but talked in general terms about time and resources and indicated a lack of understanding of the need for the process. Both owner-managers had applied for the prevention package 'Improved planning' and were introduced by the inspectors. It seemed that they did not separate the dialogue based inspection from the prevention package, so when the inspection was over, the owner-managers did not find it meaningful to continue implementing the prevention package.

In two enterprises (8a and 4a), the owner-managers found it difficult to actually implement the prevention packages because they could either not close the workshop for reorganisation, or could not find the right equipment to change work routines.

"I think it is difficult to shut down the workshop for 2 days. But everybody is ready to work long hours, and they plan to empty the workshop and fix it all at once. I have talked to my employees about applying for the prevention package and that we should all find some time where it is possible." (Case 8a)

"[...] I have found lifting equipment for the wheels that might be relevant, but it needs to be adjusted so it will fit to our wheels. This solution may therefore not be optimal." (Case 4a)

In both enterprises the owner-managers assessed that the right circumstances to implement the prevention packages were not present. In these cases the owner-manager had an interest in the prevention package, but could not overcome the challenges in the implementation process. This could maybe be due to low levels of competence and relatedness with e.g. the inspector or employer association.

5.5. Intention to act

In the construction industry, six of the owner-managers explained that the main reason to start the implementation process was the support from the facilitators.

"I think it is a good way of doing it, instead of closing the site they offer ideas. The dialogue we have had was fine and I think it is a very good initiative." (Case 1c)

"[. . .] You get some ideas yourself and talk to your employees about those ideas. [. . .] The facilitators guided us onto the right track. They said we should be aware of this or that, something that we are not aware of in our daily life. So it was good to have someone from the outside to look at our problems [. . .]." (Case 2c)

They found the content of the prevention package meaningful, and chose to incorporate the new approach into their work practice. Another reason was the strong relationship between owner-manager, facilitator, and employees. The support from the facilitators helped the owner-managers to feel competent in implementing the prevention package and they acknowledged the relevance of the new approach.

In auto repair, five owner-managers (2a, 6a, 7a, 9a, and 10a) had read the manual and thereby learned how to implement the prevention package, and it made them feel competent to implement it. These enterprises had no support from a facilitator, so relatedness was achieved either through the introduction to the prevention packages (e.g. a consultant from the auto association or an inspector) or by the relationship between the owner-manager and the employees.

"I took a day out to start [the process], and we talked about what we possibly could do. [...] We also went through the manual [. . .] and we did not do it all, but the idea was fine. [. . .] Everybody should agree, I did not want to be the one saying 'we do this and this'. They [the employees] should participate in the reorganisation as they use the workshop more than I do." (Case 9a)

The implementation of the package 'Reorganisation of the workshop' required time to close the workshop for two days and the economic support helped the owner-managers to become competent and autonomous in implementing the prevention package.

"We are not use to get a subsidy for anything [. . .], it is a new thing for us. It is very motivating. It is probably the reason why we take some time, an afternoon, to do it, and I see the rationale of some of it, like the ramp, so we do not have to work so hard to get up there [. . .]" (Case 9a)

5.6. Contextual factors influencing intention to act

In the case studies we acknowledged that some factors were important for active participation and the motivation to engage in and implement the prevention packages (what we interpret as the intention to act). The owner-managers' experience of being an employer and have employees played a role (Table 4, Appendix A). If the owner-manager had worked many years without employees and only had a few years of experience with employees, there seemed to be a tendency to a low interest in improving the OHS practice. In contrast, if the owner-manager had worked many years with employees, there seemed to be a higher priority of investment in OHS and of responsibility for the well-being of the employees.

The owner-managers' general attitudes towards OHS as well as their personal health both influenced the workplace culture and thus were other contextual factors to consider. In some of the enterprises, the owner-managers acknowledged that they themselves were exposed to physical strain, and they were aware that they would have to change jobs around the age of fifty, but they did not acknowledge that they could do anything to change it. These owner-managers had more difficulties in recognising the use of the new OHS approach and keep the motivation. Other owner-managers had back problems themselves or had experienced accidents, and they were more aware of the relevance of paying attention to their health and they were more likely to stay motivated and start the implementation process.

When asked about the legal OHS regulation, some owner-managers, especially in the construction industry, explained that they found it difficult to meet all of them and that paperwork was a challenge. For these enterprises, the manual about the prevention packages was difficult to overcome and they needed help from the facilitators. This problem was not as obvious in the auto repair industry. The lack of joint physical facilities of the enterprise could for a few owner-managers in construction limit the possibilities of a collective sensemaking within the enterprise.

6. Discussion

It is always necessary to be cautious with conclusions from case studies. Purposeful sampling of a small number of cases does not make a representative sample. However, our aim was not to be representative but to understand the mechanisms which make some owner-managers committed to be active in a certain intervention – in this case the prevention packages – and make others drop out. We cannot claim that all small enterprises will react in the same way as depicted here, but we suggest that it is likely that the mechanisms can be recognised in other cases, and that it will be valuable to consider these mechanisms in design of new intervention programmes (Flyvbjerg, 2006).

The way the enterprises were informed about the programme influenced whether the enterprises became motivated to not only apply but also participate actively and implement the programme in practice. The programme mechanisms, e.g. the economic support and use of a facilitator, were essential for the owner-managers' motivation and for some also the reason why they started the implementation process. However, this process was dependent on whether the content of the new OHS approach in the prevention package made sense and thereby developed internal regulation based on relatedness, autonomy, and competence. Thus, the intention to act showed itself in changed attitude towards OHS, in implementation of new work routines, and in that both owner-manager and employees were involved in the implementation. The whole process was influenced by contextual factors which could be either enabling or obstructing. We illustrate this process in the model in Fig. 3 which we further discuss in the next paragraphs.

The literature indicated that trust and dialogue is important for engagement of small enterprises (Hasle and Limborg, 2006; Lamm, 2000). By using the theoretical framework of Self-determination theory, we found that a trusting relationship between the owner-manager and either the labour inspector, the employer associations, or other networks made the owner-managers more inclined to develop internally regulated motivation. When trust and dialogue were lacking, the owner-managers' motivation would tend to be either externally regulated, because they feared the inspectors judgement, or as amotivation, where they did not expect much from the programme.

Another key element in the prevention packages was to adjust the programme to the target group's OHS as well as business challenges (Hasle et al., 2012b). The focus in the prevention packages on reducing physically demanding work tasks, such as heavy lifting and carrying as well as awkward working postures, was by most of the case enterprises recognised as meaningful and relevant for their workplaces. The study found that this experience of relevance was crucial to secure sensemaking and an intention to act. This also included the focus on simple and action-oriented methods combining OHS with other management goals. The owner-managers experienced that the OHS recommendations could be relevant for them in that the content of the prevention packages met their needs in accordance with their daily work routines and existing work practice. This, combined with the economic support, strengthened the possibility of the owner-manager to act and implement the new approach.

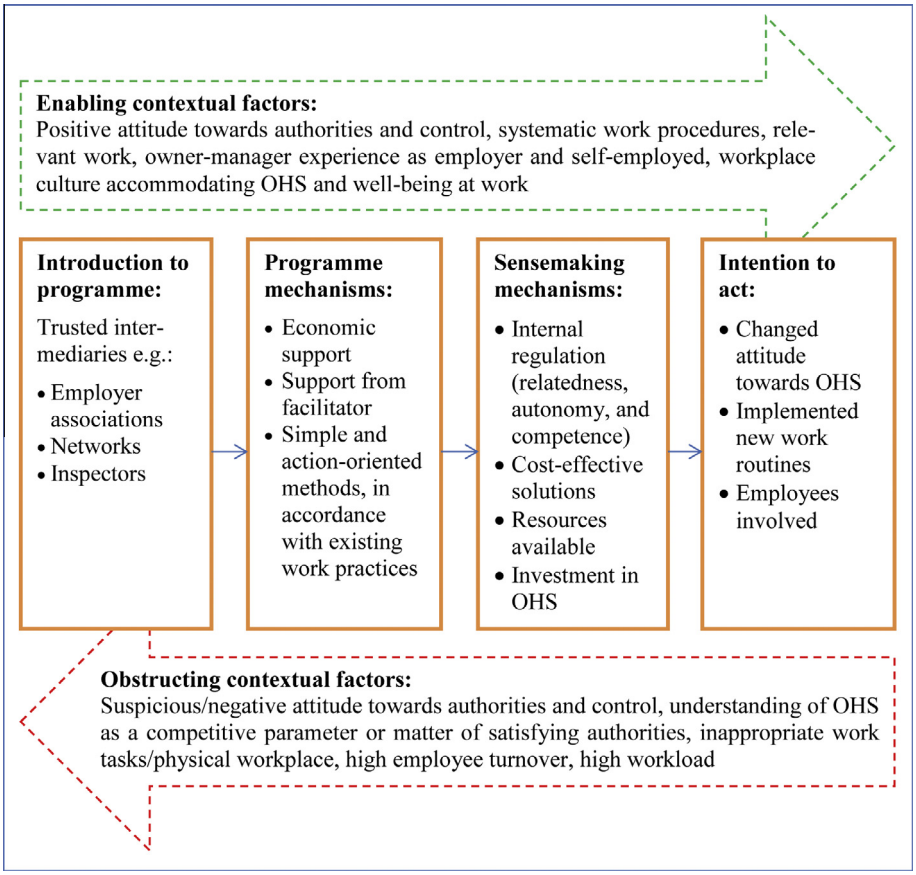

Fig. 3. Extended model of how motivation leads to action.

As the success of an intervention reflects the ability to embed programmes in context over time (Poland et al., 2008), the study showed how important the owner-managers' interpretation of the context can be for the process from motivation to action. As illustrated by the case enterprises, the context sets limits on the efficacy of the programme mechanisms which should be understood as the stakeholders' choices (sensemaking) and their capacity (resources) to put these into practice (Pawson and Tilley, 1997). By using the realist analysis, we investigated the extent to which the pre-existing social context, as experienced by the owner-managers, 'enable' or 'obstruct' the intended mechanisms of change. In our analysis, we found several contextual factors that enabled the process of sensemaking and thereby influenced whether change happened. We also found some contextual factors which obstructed the process of sensemaking.

Even though the owner-managers wished to make changes, it was not certain whether they had the ability to bring it about. For some of the owner-managers, their motivation to apply for a prevention package was internally regulated but they never turned into action as they did not feel competent to cope with the contextual barriers. In such cases even the initial internal regulation was insufficient to secure action. In the cases where the owner-manager felt competent to implement the prevention package, and at the same time felt related with the employees and/or the facilitator, the possibility of an intention to act increased.

6.1. Future OHS intervention programmes targeting small enterprises

Change depends on the motivation of the participants and the efficacy of programme mechanisms in the specific context. It is difficult to influence the pre-existing social context, but the policy makers and regulators have to consider the context in the design and promotion of the programme. In the case of the prevention packages, it was not sufficient to offer financial support and a manual with a specific content. If the programme was considered to be imposed on the enterprise, the motivation tended to be externally regulated, and active participation was reduced. Thus the point is to create an environment that will lead to internally regulated motivation. A possible avenue is to use trusted intermediaries to disseminate the information about the programme. In our study we found that mainly the employer associations and personal networks had an impact on the motivation, although labour inspectors also managed to create interest without imposing the programme, as was the case especially in the auto repair industry.

A challenge for the use of inspectors in this type of programme is the double role of enforcement and promotion. Inspectors have access to many enterprises and thereby good possibilities for promoting programmes. In some industries such as construction, some owner-managers met the inspectors with suspicion. It was therefore important that the inspectors developed their skills in handling this double role and especially their skills for understanding the contextual setting such as social rules, norms, values, and interrelationships within the enterprise. Involvement and endorsement from the employer associations and unions seemed to play an important role for the positive assessment by the owner-managers of both the programme and the role of the inspectors.

7. Conclusion

The paper explored a Danish OHS programme aimed at small enterprises in the construction and auto repair industries. We investigated the mechanisms affecting the motivation of

Table 4
Characteristics of the case enterprises.

Industry	Case number	Trade	Owner's experience (years)	Number of employees	Type of prevention package
Auto repair	1a	Auto repair workshop	20	7	Change of work routines
	2a	Auto repair workshop, car painting and car sale	38	6	Change of work routines
	3a	Auto repair workshop	8	2	Change of work routines
	4a	Car rust protection workshop	11	13	Change of work routines
	5a	Auto repair workshop and used car sale	6	5	Reorganisation of workshop
	6a	Auto repair workshop	35	2	Reorganisation of workshop
	7a	Auto repair workshop and used car salesman	5	1	Reorganisation of workshop
	8a	Auto repair and bodywork workshop	13	4	Reorganisation of workshop
	9a	Auto repair workshop and used car sale	7	3	Change of work routines and Reorganisation of workshop
	10a	Auto repair workshop	4	3	Change of work routines and Reorganisation of workshop
Construction	1c	Bricklayer	6	6	Heavy lifting
	2c	Electrician	Not known	4	Heavy lifting
	3c	Bricklayer	17	5	Heavy lifting
	4c	Carpenter	5	6	Heavy lifting
	5c	Plumber	Not known	5	Heavy lifting
	6c	Bricklayer and sewer work	23	1	Improved planning
	7c	Carpenter	7	2	Improved planning
	8c	Carpenter	10	3	Improved planning
	9c	Carpenter	14	5	Heavy lifting and Improved planning
	10c	Carpenter	20	8	Heavy lifting and Improved planning

owner-managers of small enterprises to apply for and commit themselves to the programme and how contextual factors experienced by the owner-managers influenced the motivation process.

The conclusion of our study was that motivation to participate actively in the OHS programme depended on a sensemaking process which was influenced by the way the programme was introduced, the specific content of the programme, and to what extend the context sat limits on the programme mechanisms. If the motivation of the owner-manager was internally regulated it seemed to increase the possibility for intention to act.

We found that the prevention packages led to a change of OHS practice if the process was triggered by mechanisms that were integrated in the context of the enterprise. One mechanism was the way the enterprises became aware of the programme and the incentives to improve the working conditions. By using trusted intermediaries as well as providing financial support and knowledge about solutions and methods to improve OHS the small enterprises found it easier to engage in such a programme.

Thus, it is crucial to develop programmes where the content is tailored to the specific context of small enterprises and outlined in a way which makes it easy for the owner-managers to understand the use of the programme and how it can be beneficial for his or her enterprise.

An understanding of the different kinds of motivation makes it possible to design OHS intervention programmes which foster internal regulation, supporting competence, relatedness, and autonomy. However, being motivated to act does not necessarily imply whether the action leads to long-term improvement of OHS. Thus, there is a need to study the long-term effects of such programmes and how these are related to the initial motivation for participation in the programme.

Appendix A

See Table 4.

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